

PRELIMINARY REMARKS

Claims 1 to 4 and 9 to 19 as set forth in Appendix II of this paper are now pending in this case. Claims 5 to 8 have been canceled, Claims 1 and 16 have been amended, and Claims 18 and 19 have been added as indicated in the Listing of Claims set forth in Appendix I of this paper.

Applicants have amended Claim 1 to recite the features set forth in Claims 5 to 8. Additionally, applicants have corrected Claim 16 to include section (A)(ii) of Claim 1 which was inadvertently omitted when Claim 16 was submitted. New Claims 18 and 19 have been added to further bring out some of the subsidiary embodiments of applicants preparation which are disclosed on page 17, indicated lines 17 to 35, of the application. No new matter has been added.

The Examiner has rejected Claims 1 to 5 and 7 to 17 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of *Dieing et al.* (EP 893 117 which corresponds to U.S. Serial No. 09/122,097<sup>1)</sup>) when taken in combination with the teaching of either *Matsumoto et al.* (US 5,603,926) or *Tanner et al.* (US 5,827,508).

In this context the Examiner takes the position that the disclosure of *Dieing et al.* relates to any and all cosmetic compositions conceivable because *Dieing et al.* refer to "cosmetic formulations, preferably cosmetic hair formulations"<sup>2)</sup>. It is respectfully urged that the teaching of a prior art reference must be considered in its entirety, i.e., as a whole, for what it reasonably conveys to a person of ordinary skill, and portions that would lead away from the claimed invention have to be included in the consideration<sup>3)</sup>. The Examiner will note that *Dieing et al.* disclose as the sole property of the polymer it's suitability as a hair conditioning agent<sup>4)</sup>. A hair conditioning agent, however, only serves a purpose if applied to the hair. The hair conditioning agent as taught by *Dieing et al.* does not

---

1) A copy of the U.S. application is submitted by applicants along with the supplemental Information Disclosure Statement of even date with this RCE. In the following, references to the disclosure of *Dieing et al.* are made in relation to U.S. Serial No. 09/122,097 since this text includes the formulae and indicates the line numbers.

2) For example page 1, indicated lines 19 to 22, of Serial No. 09/122,097.

3) *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (CAFC 1983), cert. denied, 469 U.S. 851 (1984).

4) Note page 3, indicated lines 16 to 18, page 9, indicated lines 27 to 32, and page 11, indicated lines 4 to 5, of Serial No. 09/122,097.

exhibit any useful property in the context of cosmetic preparations which are not applied to the hair. A reasonable person of ordinary skill would therefore not consider *Dieing t al.*'s reference to "*cosmetic formulations, preferably cosmetic hair formulations*" as an indication that cosmetic preparations different from cosmetic hair formulations are taught. Nor would a reasonable person of ordinary skill be motivated, based on the teaching of *Dieing et al.*, to incorporate the hair conditioning polymer in a cosmetic composition which is adapted for the application to the skin since *Dieing et al.* fail to suggest or imply that the polymer exhibits any property which renders it useful when applied to the skin. The teaching of *Dieing et al.* when considered as a whole for what it reasonably conveys to a person of ordinary skill is, therefore, limited to cosmetic preparations adapted to be applied to the hair, which comprise the polymer as a hair conditioning agent.

Moreover, the teaching of *Dieing et al.*, when taken alone, provides nothing which would motivate a reasonable person of ordinary skill in the art to combine the hair conditioning polymer with a metal oxide as UV filter. Where the hair conditioning agent is provided in a preparation which is not adapted to remain in the hair (*for example shampoos and rinses*), the incorporation of any UV filtering compound serves no purpose because such a compound is washed out. In the event that the hair conditioning agent is provided in a preparation which is adapted to remain in the hair, metal oxide UV filters would be expected to form a pigment film which either remains in the hair and undesirably dulls the appearance of the hair, or the pigment film is removed when the hair is brushed. In the latter case the UV filter would not only be wasted but could also result in an undesirable residue being shed to the clothing. Considering the broad variety of UV filtering compounds available to a person of ordinary skill in the pertinent art, such person would therefore not turn to a metal oxide pigment as a UV filter for a hair conditioner adapted to remain on the hair<sup>5</sup>).

The teaching of *Matsumoto et al.* relates to a particular cationic polymer which is useful as a thickener for cosmetic compositions. Due to *Matsumoto et al.*'s particular requirements pertaining to the mono-

---

5) Note, for example, *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (CAFC 1984) which holds that there is no suggestion or motivation to make the proposed modification if the proposed modification would render the prior art invention which is being modified unsatisfactory for its intended purpose.

mer units of the polymer, the thickener polymer taught by *Matsumoto et al.* and the conditioning polymer of *Dieing t al.* are not chemically equivalent. Further, the respective serve different purposes, ie. a thickening effect of *Matsumoto et al.*'s polymer as opposed to the hair conditioning effect of *Dieing et al.*'s polymer.

*Matsumoto et al.* further provide that the polymer can be applied as a thickener in cosmetic preparations adapted for the application to the skin and in cosmetic preparations adapted for the application to the hair. With regard to the latter, *Matsumoto et al.* point out that a combination of the thickener polymer with a hair setting polymer imparts moisture resistance and imparts flexibility to the film formed by the hair setting polymer. The hair setting polymers referenced by *Matsumoto et al.*<sup>6)</sup> and the hair conditioning polymer disclosed by *Dieing et al.* differ in their chemical structure as well as their purpose<sup>7)</sup>.

Additionally, *Matsumoto et al.* mention that the various cosmetic compositions which are either adapted for the application to the skin or are adapted for the application to the hair may contain further conventional additives including UV absorbing compounds. Exemplary, "benzoic acid derivatives, anthralinic acid derivatives, salicylic acid derivatives, cinnamic acid derivatives, benzophenone derivative[s] and the like"<sup>8)</sup> are mentioned in this context. *Matsumoto et al.* also provide a number of cosmetic preparations for the treatment of the hair or the skin including the preparation in Example 51<sup>9)</sup> which contains zinc oxide and titanium oxide, both treated with silicone, as well as yellow, red and black iron oxide, each treated with silicone. In contrast to the Examiner's assertion that Example 51 of *Matsumoto et al.* provides for a hair cosmetic, *Matsumoto et al.* state that the pigment containing composition is "an emulsified foundation"<sup>10)</sup> and a foundation is a skin cosmetic rather than a hair cosmetic as the Examiner would have it.

---

6) Note, for example, col. 11, indicated line 24, to col. 12, indicated line 32, of *US 5,603,926*.

7) Note, in this context, Example 27, col. 28, indicated line 47 et seq., of *US 5,603,926*, where *Matsumoto et al.* state that hair which was pre-treated with a composition comprising the thickener polymer and a hair setting polymer could easily be conditioned.

8) Note col. 10, indicated lines 61 to 64, of *US 5,603,926*.

9) Col. 48, indicated lines 7 et seq., of *US 5,603,926*.

10) Col. 48, indicated lines 41 and 42, of *US 5,603,926*.

From the standpoint of a reasonable person of ordinary skill in the art, the combination of the teachings of *Dieing t al.* and of *Matsumoto et al.* therefore does not provide anything which would motivate a reasonable person of ordinary skill in the art to combine the hair conditioning polymer disclosed by *Dieing et al.* with a UV filtering pigment.

The teaching of *Tanner et al.*, when considered in combination with the disclosure of *Dieing et al.*, equally fails to provide anything which would motivate a person of ordinary skill in the art to do what applicants have done. *Tanner et al.* specifically address compositions adapted to protect the skin against UV radiation. The skin cosmetic compositions of *Tanner et al.* comprise

- (a) a dibenzomethane sunscreen compound,
- (b) a surface treated zinc oxide, and
- (c) a carrier suitable for application to human skin.

A reasonable person of ordinary skill in the pertinent art would not consider a hair conditioning agent to be a "carrier suitable for application to skin". Accordingly, such a person of ordinary skill would not, without more, incorporate the hair conditioning polymer taught by *Dieing et al.* into the skin cosmetic composition disclosed by *Tanner et al.*

Moreover, turning to *Tanner et al.*'s disclosure concerning the carriers and optional ingredients<sup>11)</sup>, no information is found which would suggest the incorporation of a hair conditioning polymer as disclosed by *Dieing et al.* into the UV protecting skin cosmetic. *Tanner et al.* mention "crosslinked polyacrylate polymers useful as thickeners or gelling agents"<sup>12)</sup> and "polyacrylamide polymers"<sup>13)</sup> which are also conventionally applied as thickeners. However, *Dieing et al.*'s polymers are neither "crosslinked polyacrylate polymers" or "polyacrylamide polymers", nor are *Dieing et al.*'s polymers "useful as thickeners or gelling agents". In the enumeration of "other optional components"<sup>14)</sup>, no mention is made of hair conditioning agents such as the polymer disclosed by *Dieing et al.*

Bearing in mind that the only property of the polymer disclosed by *Dieing et al.* resides in the hair conditioning effect, a reason-

11) Col. 8, indicated line 37, to col. 15, indicated line 6, of *US 5,827,508*.

12) Col. 10, indicated line 33 et seq., of *US 5,827,508*.

13) Col. 13, indicated line 8 et seq., of *US 5,827,508*.

14) Col. 14, indicated line 53 et seq., of *US 5,827,508*.

able person of ordinary skill in the art would not even combine the teaching of *Tanner t al.* and *Dieing et al.*

Obviousness within the meaning of Section 103(a) requires that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference(s) before him to make the proposed substitution, combination, or other modification which is necessary to arrive at the invention as claimed<sup>15</sup>). The level of skill in the art alone, or the mere fact that references can be combined or modified, cannot provide the suggestion which is required to establish obviousness under Section 103(a)<sup>16</sup>). While it is possible to combine the teaching of *Dieing et al.* with the disclosure of *Matsumoto et al.* or *Tanner et al.*, the specific combination which is necessary to produce applicants' invention is not suggested or implied. More specifically, the combination of the teaching of *Dieing et al.* with the disclosure of *Matsumoto et al.* or *Tanner et al.* fails to motivate a person of ordinary skill to

- employ a pigment such as micronized "titanium dioxide, zinc oxide, cerium oxide, aluminum oxide, silicon oxide, zirconium oxide, manganese oxide, aluminum oxide and iron oxide" in combination with a hair conditioning polymer as disclosed by *Dieing et al.*, or
- incorporate the hair conditioning polymer of *Dieing et al.* into a cosmetic composition adapted for the treatment of skin as disclosed by *Matsumoto et al.* and *Tanner et al.*, or
- incorporate the hair conditioning polymer of *Dieing et al.* and a micronized metal oxide pigment into a cosmetic composition adapted for the treatment of hair as disclosed by *Matsumoto et al.*

Favorable reconsideration of the Examiner's position and withdrawal of the rejection under Section 103(a) is therefore respectfully solicited.

REQUEST FOR EXTENSION OF TIME:

It is respectfully requested that a three month extension of time be granted in this case. A check for the \$950.00 fee is attached.

---

15) *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

16) *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (CAFC 1999); *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (CAFC 1990); *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (CAFC 1992).

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 11.0345. Please credit any excess fees to such deposit account.

Respectfully submitted,

KEIL & WEINKAUF

A handwritten signature in dark ink, appearing to read 'HB Keil', written over the printed name.

Herbert B. Keil

Reg. No. 18,967

1350 Connecticut Ave, N.W.

Washington, D.C. 20036

(202) 659-0100

Encl.: THE LISTING OF CLAIMS (Appendix I)

THE AMENDED CLAIMS (Appendix II)

HBK/BAS

## A P P E N D I X I:

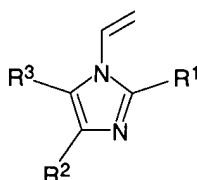
THE LISTING OF CLAIMS (version with markings):

1. (currently amended) A mixture comprising

A) at least one copolymer obtained by

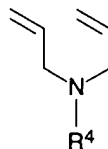
(i) free-radically initiated solution polymerization of a monomer mixture of

(a) 0.01 to 99.99% by weight of at least one monomer chosen from the group consisting of  
N-vinylimidazoles of formula (I)



I

in which the radicals R<sup>1</sup> to R<sup>3</sup>, independently of one another, are hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl or phenyl, and diallylamines of formula (II)

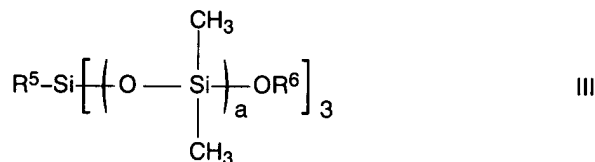


II

[, optionally in partially or completely quaternized form]  
in which the radical R<sup>4</sup> is C<sub>1</sub>-C<sub>24</sub>-alkyl;

- (b) 0.01 to 99.99% by weight of at least one [~~neutral or basic water soluble monomer which is different from (a)~~]  
N-vinyllactam;
- (c) 0 to 50% by weight of at least one unsaturated acid or an unsaturated anhydride;
- (d) 0 to 50% by weight of at least one free-radically copolymerizable monomer which is different from (a), (b) and (c); and
- (e) 0 to 10% by weight of at least one monomer having at least two ethylenically unsaturated nonconjugated double bonds which acts as crosslinker, and
- (ii) subsequent partial or complete quaternization or protonation of the polymer where the monomer (a) is not quaternized or only partially quaternized, and

- B) as inorganic UV filter at least one [inorganic UV filter] micronized metal oxide chosen from the group consisting of titanium dioxide, zinc oxide, cerium oxide, aluminum oxide, silicon oxide, zirconium oxide, manganese oxide, aluminum oxide and iron oxide.
2. (previously presented) A mixture as claimed in claim 1, wherein the copolymer A) is obtained by solution polymerization in water.
  3. (previously presented) A mixture as claimed in claim 1, wherein the monomer (e) is used in a weight amount of from 0.01 to 10%.
  4. (previously presented) A mixture as claimed in claim 1, wherein the protonation according to (ii) takes place during the preparation of the mixture.
  5. (canceled)
  6. (canceled)
  7. (canceled)
  8. (canceled)
  9. (previously presented) A mixture as claimed in claim 1, comprising, as inorganic UV filter B), at least one hydrophobicized metal oxide chosen from the group consisting of titanium dioxide and zinc oxide.
  10. (original) A mixture as claimed in claim 9, in which the metal oxide has been coated with a silicone of the formula III



in which, independently of one another,  $\text{R}^5$  is  $\text{C}_1\text{-C}_{12}$ -alkyl and  $\text{R}^6$  is methyl or ethyl, and  $a$  is a value from 4 to 12.

11. (previously presented) A mixture as claimed in claim 1, wherein the proportion of inorganic UV filters is 0.1 to 99.9% by weight.
12. (previously presented) A mixture as claimed in claim 1, comprising at least one further organic UVA and/or UVB filter.



13. (*previously presented*) A process for the preparation of cosmetic and dermatological preparations wherein a mixture is prepared as defined in claim 1, and then optionally mixed with other compounds.
14. (*previously presented*) The process as claimed in claim 13 for producing cosmetic and dermatological preparations for protecting the human skin or human hair against solar rays, wherein the mixture is prepared, and then mixed with compounds which absorb in the UV region and which are known per se for cosmetic and pharmaceutical preparations.
15. (*previously presented*) A cosmetic or dermatological sunscreen preparation for protecting the human skin or human hair against solar rays, comprising a mixture defined as in claim 1.
16. (*currently amended*) A mixture comprising
  - A) at least one copolymer obtained by
    - (i) free-radically initiated solution polymerization of a monomer mixture of
      - (a) 10 to 70% by weight of 3-methyl-1-vinylimidazolium methosulfate,
      - (b) 20 to 89.95% by weight of N-vinylpyrrolidone,
      - (c) 0.05 to 5% by weight of N,N'-divinylethylenurea, and
    - (ii) subsequent partial or complete quaternization or protonation of the polymer where the monomer (a) is not quaternized or only partially quaternized, and
  - B) 30 to 90% by weight, based on the solids content of the mixture, of at least one hydrophobicized metal oxide chosen from the group consisting of titanium dioxide and zinc oxide.
17. (*previously presented*) A process for protecting the human skin or human hair against solar rays, wherein an effective amount of a cosmetic or dermatological preparation prepared according to the process claimed in claim 13 is applied to the human skin or human hair.
18. (*new*) A cosmetic or dermatological sunscreen preparation for protecting the human skin or human hair against solar rays, comprising one or more customary additives or solvents and an effective amount of the mixture defined in claim 1.
19. (*new*) The preparation defined in claim 18, wherein the mixture constitutes from 0.001 to 30% by weight.